

ABSTRACT

A method, apparatus, and computer-readable media for retrieving records in a hierarchical set of the records having a plurality of hierarchical levels and a plurality of hierarchical depths, each of the records having a tag that is unique within the hierarchical set of the records, comprises identifying one of the records in the hierarchical set of the records; modifying the tag, thereby producing a key; indexing the hierarchical set of the records only once, thereby selecting one or more of the records within the hierarchical set of the records, wherein indexing the hierarchical set of the records only once comprises applying the key to the hierarchical set of the records; and retrieving the selected records.